What is claimed is:

1. A method for forming a Re-Cr alloy film, comprising performing an electroplating process using a plating bath which contains an aqueous solution including:

a perrhenate ion in a concentration of 0.01 to 2.0 mol/L; and

a chromium (IV) ion in a concentration of 0.01 to 3.0 mol/L,

wherein said plating bath has a pH of 0 to 8, and a temperature of 10 to 80°C.

2. The method as defined in claim 1, wherein said alloy film to be formed has a composition consisting of Re in the range of 60 to 90% by atomic composition, and the remainder being Cr except inevitable impurities.

3. The method as defined in claim 1, wherein said plating bath contains a chromium (III) ion in a concentration of 0.0001 to 0.03 mol/L and/or a sulfate ion in a concentration of 0.0001 to 0.03 mol/L.